

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-23 (Cancelled)

Claim 24 (Amended) A method for delivering a reagent into the nucleoplasm of a cell, wherein said cell is susceptible to an oligomeric form of α -lactalbumin (MAL), said method comprising combining said reagent with MAL to form a complex, and applying said complex to the cells, wherein said complex is delivered into the nucleoplasm of a cell.

Claim 25 (Previously Presented) A method according to claim 24, wherein the cell is a tumour cell.

Claim 26 (Previously Presented) A method according to claim 24, wherein the reagent is an agent capable of killing cells.

Claim 27 (Previously Presented) A method according to claim 24, wherein the reagent is a diagnostic reagent.

Claim 28 (Previously Presented) A method according to claim 24, wherein the reagent is coupled to MAL by conjugation.

Claim 29 (Previously Presented) A method according to claim 24, wherein said reagent is coupled to MAL by covalent bonding.

Claim 30 (Previously Presented) A method according to claim 29, wherein the said reagent is covalently bonded to MAL by way of a linking or spacer group.

Claim 31 (Previously Presented) A method according to claim 24, wherein said reagent comprises a polypeptide or protein, wherein said polypeptide or protein is fused to MAL.

Claim 32 (Previously Presented) A method according to claim 26, wherein said reagent is a cytotoxin.

Claim 33 (Previously Presented) A method according to claim 32, wherein the cytotoxin is selected from the group consisting of a chemotherapeutic reagent, a microbial toxin and a monoclonal antibody.

Claim 34 (Previously Presented) A method according to claim 27, wherein said reagent comprises a labeling agent.

Claim 35 (Previously Presented) A method according to claim 34, wherein the labeling agent is selected from the group consisting of biotin and a radioactive label.

Claim 36 (Previously Presented) A method according to claim 35, wherein the labeling agent is a radioactive label selected from the group consisting of ^{125}I , ^{14}C and ^{35}S .

Claims 37-48 (Cancelled)

Claim 49 (Previously Presented) A method of diagnosing cancer in a patient comprising administering to a patient an effective amount of a protein complex [[according to claim 41]] comprising an oligomeric form of α -lactalbumin (MAL) and a labeling agent, and detecting said labeling agent in the nucleus of a cell.

Claim 50 (Previously Presented) A method of diagnosing cancer comprising applying to cells which are suspected of being cancerous an effective amount of a protein complex [[according to claim 41]] comprising an oligomeric form of α -lactalbumin (MAL) and a labeling agent, and observing penetration of said agent into the nucleus of the cells, wherein penetration into the nucleus is indicative of cancer.

Claim 51 (Previously Presented) A method according to claim 50, wherein said method is carried out in vitro on a sample removed from a patient.

Claim 52 (Previously Presented) A method of detecting a cancer cell comprising applying to a cell which is suspected of being cancerous, a protein complex [[according to claim 41]] comprising an oligomeric form of α -lactalbumin (MAL) and a labeling agent, and observing penetration of said complex into the nucleus of the cell, wherein penetration into the nucleus is indicative of a cancer cell.

Claim 53 (New) A method of detecting a reagent in a nucleoplasm of a cell, wherein said cell is susceptible to an oligomer form of α -lactalbumin (MAL), said method comprising applying to said cells an effective amount of a protein complex comprising an oligomeric form of α -lactalbumin (MAL) and a reagent, allowing penetration of said reagent into the nucleus of the cells, and detecting said reagent in the nucleus of said cell.

Claim 54 (New) A method according to claim 53, wherein the cell is a tumour cell.

Claim 55 (New) A method according to claim 53, wherein the reagent is an agent capable of killing cells.

Claim 56 (New) A method according to claim 53, wherein the reagent is a diagnostic reagent.

Claim 57 (New) A method according to claim 53, wherein the reagent is coupled to MAL by conjugation.

Claim 58 (New) A method according to claim 53, wherein said reagent is coupled to MAL by covalent bonding.

Claim 59 (New) A method according to claim 58, wherein the said reagent is covalently bonded to MAL by way of a linking or spacer group.

Claim 60 (New) A method according to claim 53, wherein said reagent comprises a polypeptide or protein, wherein said polypeptide or protein is fused to MAL.

Claim 61 (New) A method according to claim 55, wherein said reagent is a cytotoxin.

Claim 62 (New) A method according to claim 61, wherein the cytotoxin is selected from the group consisting of a chemotherapeutic reagent, a microbial toxin and a monoclonal antibody.

Claim 63 (New) A method according to claim 56, wherein said reagent comprises a labeling agent.

Claim 64 (New) A method according to claim 63, wherein the labeling agent is selected from the group consisting of biotin and a radioactive label.

Claim 65 (New) A method according to claim 64, wherein the labeling agent is a radioactive label selected from the group consisting of ^{125}I , ^{14}C and ^{35}S .